

We claim:

1. An implantable medical lead for non-direct contact electrical stimulation of the sacral nerves comprising:

5 a lead body extending between lead proximal and distal ends, the lead body comprising a proximal connector element, a distal wire coil electrode, and a lead conductor extending between the connector element and the wire coil electrode, the wire coil electrode further comprising a ring-shaped electrode connector element extending around the lead body and electrically connected to the lead conductor, an elongated, 10 flexible, wire coil extending between first and second coil ends and over a segment of the lead body and electrically insulated from the lead conductor, the electrode connector element coupled to the electrode connector in an annular connection zone providing mechanical and electrical connection,

15 whereby the wire coil electrode is capable of being inserted through a foramen of the sacrum into operative relation with a sacral nerve to provide stimulation to the sacral nerve without necessarily being in direct contact with the sacral nerve.

2. The implantable medical lead of Claim 1, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and coupled together in the annular connection zone

20 3. The implantable medical lead of Claim 1, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and butt-welded together in the annular connection zone

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4. The implantable medical lead of Claim 1, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and adhered together in the annular connection zone

5. The implantable medical lead of Claim 1, wherein the ring-shaped electrode connector is formed of a solid tube side wall with an opening through the side wall that the distal end of the lead conductor is extended into and attached to the side wall.

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6. The implantable medical lead of Claim 1, wherein the length of the wire coil electrode is preferably in the range of about 10.0 mm to about 38.0 mm and the lead body outer diameter is preferably in the range of about 0.5 mm to about 2 mm.

10 7. An implantable medical lead for non-direct contact electrical stimulation of the sacral nerves comprising:

a lead body extending between lead proximal and distal ends, the lead body comprising a first proximal connector element, a distal wire coil electrode, and a first lead conductor extending between the first proximal connector element and the wire coil electrode, the wire coil electrode further comprising a ring-shaped electrode connector element extending around the lead body and electrically connected to the lead conductor, an elongated, flexible, wire coil extending between first and second coil ends and over a segment of the lead body and electrically insulated from the lead conductor, the electrode connector element coupled to the electrode connector in an annular connection zone providing mechanical and electrical connection,

the lead body further comprising a second proximal connector element, a distal ring-shaped electrode spaced apart from the distal wire coil electrode, and a second lead conductor extending between the second proximal connector element and the distal ring-shaped electrode,

25 whereby the wire coil electrode is capable of being inserted through a foramen of the sacrum into operative relation with a sacral nerve to provide stimulation to the sacral nerve without necessarily being in direct contact with the sacral nerve.

8. The implantable medical lead of Claim 7, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and coupled together in the annular connection zone

5 9. The implantable medical lead of Claim 7, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and butt-welded together in the annular connection zone

10 10. The implantable medical lead of Claim 7, wherein the wire coil and connector element have a common outer diameter and inner diameter and are axially aligned and adhered together in the annular connection zone

15 11. The implantable medical lead of Claim 7, wherein the ring-shaped electrode connector is formed of a solid tube side wall with an opening through the side wall that the distal end of the lead conductor is extended into and attached to the side wall.

20 12. The implantable medical lead of Clam 7, wherein the distal ring-shaped electrode is positioned distal to the wire coil electrode.

13. The implantable medical lead of Clam 7, wherein the distal ring-shaped electrode is positioned proximal to the wire coil electrode.

25 14. The implantable medical lead of Clam 7, wherein:  
the distal ring-shaped electrode is positioned distal to the wire coil electrode.  
the lead body further comprises a third proximal connector element, a further ring-shaped electrode positioned proximal to the wire coil electrode, and a third lead conductor extends between the third proximal connector element and the further ring-shaped electrode.

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15. The implantable medical lead of Claim 7, wherein the length of the wire coil electrode is preferably in the range of about 10.0 mm to about 38.0 mm and the lead body outer diameter is preferably in the range of about 0.5 mm to about 2.0 mm.

5 16. An implantable medical lead for non-direct contact electrical stimulation of the sacral nerves comprising:

a lead body extending between lead proximal and distal ends, the lead body comprising a proximal connector element, an elongated distal mesh electrode, and a lead conductor extending between the connector element and the distal electrode, the distal 10 mesh electrode further comprising an elongated tube surrounding the lead body and electrically connected to the lead conductor having a side wall formed of a lattice framing windows extending through the side wall and imparting flexibility to the elongated distal mesh electrode,

15 whereby the mesh electrode is capable of being inserted through a foramen of the sacrum into operative relation with a sacral nerve to provide stimulation to the sacral nerve without necessarily being in direct contact with the sacral nerve.

20 17. The implantable medical lead of Clam 16, wherein the lead body further comprises a second proximal connector element, a distal ring-shaped electrode spaced from the mesh electrode, and a second lead conductor extending between the second proximal connector element and the distal ring-shaped electrode.

18. The implantable medical lead of Clam 17, wherein the distal ring-shaped electrode is positioned distal to the mesh electrode.

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19. The implantable medical lead of Clam 17, wherein the distal ring-shaped electrode is positioned proximal to the mesh electrode.

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20. The implantable medical lead of Claim 17, wherein:
- the distal ring-shaped electrode is positioned distal to the mesh electrode.
  - the lead body further comprises a third proximal connector element, a further ring-shaped electrode positioned proximal to the mesh electrode, and a third lead
- 5 conductor extends between the third proximal connector element and the further ring-shaped electrode.

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